

**AC/ACJ 25.1327
DIRECTION INDICATOR**

(Final Report)

(as agreed in AVHWG meeting#6 in Montreal on 28 June 2000)

1. What is the underlying safety issue addressed by AC/ACJ?

Assures that instruments identified in FAR/JAR 25.1303(b)(6) have an accuracy which is adequate for safe operation of the airplane, considering that the related equipment will have some errors due to conventional installation characteristics or the performance of the equipment itself.

This corresponds to the proposed harmonized FAR/JAR 25.1327, which has been submitted in conjunction with this report.

2. What are current FAR and JAR standards?

There is no current FAR AC.

Current ACJ 25X1328

1. After correction the deviation on any heading should not exceed 1°, except that –
 - a. On aeroplanes with a short cruising range, the above limit may be extended after consultation with the National Authority.
 - b. A change in deviation due to the current flow in any item of electrical equipment and its associated wiring is permissible, but should not exceed 1°. The combined change for all such equipment, with all combinations of electrical load, should not exceed 2°.
 - c. A change in deviation due to the movement of any component, (e.g. controls or undercarriage) in normal flight is permissible, but should not exceed 1°.
2. The change in deviation due to the proximity of any item of equipment containing magnetic material should not exceed 1° and the combined change for all such equipment should not exceed 2°.

3. What are the differences in the standards?

There is no standard FAA AC 25-1327, while there is a related JAA ACJ 25X1328.

4. What, if any, are the differences in required means of compliance?

ACJ 25X1328 provides interpretation for a stabilized magnetic indicator, with a suggested accuracy dependent on magnetic effects. There is no related FAA AC.

5. What is the proposed action?

Use the existing ACJ25X1328 as a baseline for a harmonized AC/ACJ 25.1327. This corresponds with the proposed harmonized rule (FAR/JAR 25.1327), which essentially eliminates the existing JAR 25X1328. Update the harmonized AC/ACJ to clarify what is necessary for safe operation of an airplane, and to correspond with the minimum operational performance standards (MOPS) of the equipment.

6. What should the harmonized standard be?

AC/ACJ 25.1327

This AC addresses the accuracy of stabilized magnetic heading systems, required for safe operation of the airplane. These systems include means to compensate or correct for errors induced by stable magnetic effects in the airplane. Additional effects due to electromagnetic transients and configuration changes are not normally “compensated” by the magnetic heading system and are also included in this AC.

Should the correction become unavailable (either intentionally or unintentionally), the effects of the resulting heading indication should be considered for safe operation of the airplane. This AC addresses the condition where correction is available and the condition where correction is not available (or failed).

In most circumstances, heading information is not directly used as the primary means of navigation. This condition should permit the applicant to show that the accuracy adequate for the safe operation of the airplane may be different than what is defined in this AC.

1. After correction the cumulative deviation on any heading should not exceed 5°, based on the following:
 - a. A change in deviation due to the equipment of the heading system components, the total of which should not exceed 2°.
 - b. A change in deviation due to the current flow in any item of electrical equipment and its associated wiring is permissible, but should not exceed 1°. The total cumulative effect for all combinations of equipment, with all combinations of electrical load, should not exceed 2°.
 - c. A change in deviation due to the movement of any component, (e.g. controls or undercarriage) in normal flight is permissible, but should not exceed 1°.
2. If correction fails or is not available, the change in deviation due to the proximity of all equipment containing magnetic material should not exceed 2°.

Note: On airplanes with a short cruising range, the above limits may be extended after consultation with the National Authority. For airplanes that do not depend on direction or heading information for navigation (VOR, ILS, FMS, GPS), the above limits may be extended after consultation with the National Authority.

AVHWG SRD Harmonization

7. **How does this proposed standard address the underlying safety issue (identified in #1)?**
The proposed standard provides a clarification to the basic requirement for certain instruments that display direction information.
8. **Relative to current FAR, does the proposed standard increase, decrease, or maintain the same level of safety?**
The proposed standard may increase the level of safety by clarifying the harmonized requirement (FAR/JAR 25.1327).
9. **Relative to current industry practice, does the proposed standard increase, decrease, or maintains the same level of safety?**
Maintains the same level of safety.
10. **What other options have been considered and why were they not selected?**
The group considered using the ACJ25X1328 as is, but rejected it because it needed some clarification.
11. **Who would be affected by the proposed change?**
Nobody, since this is already considered standard industry practice.
12. **To ensure harmonization, what current advisory material (e.g., ACJ, AMJ, AC, policy letters) need to be included in the rule text or preamble?**
This is a modification of current advisory material (ACJ25X1328).
13. **Is existing FAA advisory material adequate?**
There is no existing FAA advisory material.
14. **If not, what advisory material should be adopted?**
This is a modification of current advisory material (ACJ25X1328).
15. **How does the proposed standard affect the current ICAO standard?**
The AVHWG is not aware of any.
16. **How does the proposed standard affect other HWG's?**
None affected.
17. **What is the cost impact of complying with the proposed standard?**
None anticipated, because current industry practice is already compliant with the proposed standard.
18. **Does the HWG want to review the draft NPRM at "Phase 4" prior to publication in the Federal Register?**
Yes.

AVHWG SRD Harmonization

- 19. In light of the information provided in this report, does the HWG consider that the “fast Track” process is appropriate for this rulemaking project, or is the project too complex or controversial for the “Fast Track” process?**

This project is appropriate for the “Fast Track” process.